

PROTECTIVE CAGE FOR FOOTWEAR BLADDER

CROSS REFERENCE TO RELATED APPLICATION

- 2/7/05
- [01] This application is a continuation of and claims the benefit of U.S. Application Serial No. 09/953,978, filed September 17, 2001, *now patent 6,665,958*

FIELD OF THE INVENTION

- [02] The present invention relates in general to footwear and the bladders used in footwear. More particularly, the present invention relates to a protective cage for the bladder that reduces bladder failure.

BACKGROUND OF THE INVENTION

- [03] Footwear is divided generally into two parts, an upper and a sole. The upper is the portion of the footwear designed to comfortably enclose the foot, while the sole is the portion of the footwear designed to provide traction, protection, cushioning, and a durable wear surface. Typically, the sole includes several layers, including a resilient, shock absorbent material as a midsole and a ground engaging durable material as an outsole.
- [04] Known midsoles are typically made of conventional foam materials, such as ethylene vinyl acetate (EVA) or polyurethane. These materials compress resiliently under an applied load, such as forces generated by athletes, to provide cushioning to the athlete's feet and legs. Conventional foam materials are resiliently compressible, in part, due to the inclusion of foam having open and closed cells defining an inner volume that is substantially displaced by gas. In other words, the foam includes bubbles within the material which give the foam its compressible and resilient features. Conventional foam materials, however, have certain drawbacks. Most notably, the foam materials deteriorate by compaction after repeated compression caused by extended use of the footwear. The deterioration is the result of the collapse